

CLAIM AMENDMENTS

1 1. (currently amended) A chemical sensor having
2 comprising:
3 _____ a substrate;
4 _____ a first metallization plane ~~arranged~~ on ~~[[a]]~~ the
5 substrate; ~~(1) and in which~~
6 an electrode structure ~~(IDT)~~ is formed in the first
7 metallization plane,
8 a passivation layer ~~[[6]]~~ applied to the first
9 metallization plane and ~~structured~~ formed with contact holes,
10 ~~[[and]]~~
11 a chemical-sensitive ceramic layer ~~[[9]]~~ on the
12 passivation layer ~~[[6]]~~ and in the contact holes and capable of
13 changing electrical properties when contacted by predetermined
14 chemicals; and ~~(7), characterized in that~~
15 a bond-promoting layer ~~(8) is provided which is~~
16 configured as a second metallization plane and ~~is located~~ between
17 the passivation layer ~~[[6]]~~ and the ceramic layer ~~[[9]]~~.

1 2. (currently amended) The chemical sensor according to
2 claim 1 ~~characterized in that~~ wherein the second metallization
3 plane is so applied that it comes to lie in the contact holes
4 ~~[[7]]~~ upon the first metallization plane.

1 3. (currently amended) The chemical sensor according to
2 claim 1, ~~characterized in that a~~ further comprising
3 another passivation layer ~~(10)~~ ~~is located~~ between the
4 bond-promoting layer 8 and the ceramic layer ~~[(9)]~~ and so
5 structured that the ~~[[body]]~~ bond-promoting layer ~~[(8)]~~ is
6 partially passivated.

1 4. (currently amended) The chemical sensor according to
2 claim 1 ~~characterized in that~~ wherein two coplanar electrodes are
3 formed in the electrode structure ~~[(IDT)]~~ of the first
4 metallization plane ~~, two coplanar electrodes (IDT1, IDT2) are~~
5 formed by structuring and the second metallization plane does not
6 lie at a defined electrical potential.

1 5. (currently amended) The chemical sensor according to
2 claim 1 ~~characterized in that~~ wherein the electrode structure
3 ~~[(IDT)]~~ of the first metallization plane forms a first electrode
4 ~~[(IDT1)]~~ and the second metallization plane is configured as a
5 second electrode ~~[(IDT2)]~~ and lies at a defined electrical
6 potential so that the sensitive ceramic layer ~~[(9)]~~ is provided
7 with a vertical electrode.

1 6. (currently amended) The chemical sensor according to
2 claim 5 ~~1 characterized in that~~ wherein the first and second
3 electrodes ~~[(IDT 1, IDT 2)]~~ are configured as interdigitating
4 electrodes.

1 7. (currently amended) The chemical sensor according to
2 claim 1 ~~characterized in that~~ wherein a heating structure and a
3 temperature-measuring structure are formed in the first
4 metallization plane ~~[[,]]~~ in addition to the electrode structure
5 ~~(IDT) a heating structure (4) and a temperature measuring structure~~
6 ~~(5) are formed.~~

1 8. (currently amended) The chemical sensor according to
2 claim 7 ~~1 characterized in that~~ wherein the structures ~~[(4, 5,~~
3 ~~IDT)]~~ of the first metallization plane are formed on the front
4 side of an Si-substrate ~~[(1)]~~ which has a membrane ~~[(3)]~~.

1 9. (currently amended) The chemical sensor according to
2 claim 1 ~~characterized in that~~ wherein the material for the second
3 metallization plane is Au, Cr/Au, Pt, Pd, W or Sn.

1 10. (currently amended) The chemical sensor according
2 to claim 1 ~~characterized in that~~ wherein the application of the
3 sensitive ceramic layer is effected by silk screening, dispenser
4 application or an ink jet process.